CLAIMS

1. A method of correcting rule violations of a photomask using a digital representation of the photomask, comprising:

identifying violating areas of the photomask from a digital representation of the photomask, the violating areas including at least one of areas violating a minimum width rule and areas violating a minimum space rule for said photomask; and

manipulating each of the violating areas differently based on the placement of the violating area relative to a design shape of a layout pattern to be imaged using the photomask, said manipulating performed for the purpose of eliminating the rule violations.

2. The method of claim 1 further comprising manipulating each of the violating areas differently based on whether the area violates a minimum width rule and whether the area violates a minimum space rule for said photomask.

3. The method of claim 2 wherein said manipulating includes enlarging an area that violates said minimum width rule when said area lies inside a design shape.

4. The method of claim 2 wherein said manipulating includes enlarging an area that violates said minimum space rule when said area lies outside a design shape.

5. The method of claim 2 wherein said manipulating includes removing an area that violates said minimum width rule when said area lies outside a design shape.

6. The method of claim 2 wherein said manipulating includes filling an area that violates said minimum space rule when said area lies inside a design shape.

7. The method of claim 2 wherein said manipulating includes:

enlarging an area that violates said minimum width rule when said area lies inside a design shape;

removing an area which violates said minimum width rule when said area lies outside a design shape;

filling an area which violates said minimum space rule when said area lies inside a design shape; and

enlarging an area which violates said minimum space rule when said area lies outside a design shape.

8. The method of claim 2 wherein said digital representation of said photomask is corrected for optical proximity prior to said step of identifying said violating areas.

9. The method of claim 8 wherein said violating areas include an area violating a minimum space rule between a filled area of a mask shape and another filled area of the mask shape.

10. The method of claim 8 wherein said violating areas include an area violating a minimum space rule between a mask shape and another mask shape of said photomask.

11. A machine readable storage medium having a set of instructions recorded thereon for performing a method of correcting rule violations of a photomask using a digital representation of the photomask, said method comprising:

identifying violating areas of the photomask from a digital representation of the photomask, the violating areas including at least one of areas violating a minimum width rule and areas violating a minimum space rule for said photomask; and

manipulating each of the violating areas differently based on the placement of the violating area relative to a design shape of a layout pattern to be imaged using the photomask, said manipulating performed for the purpose of eliminating the rule violations.

12. The machine readable storage medium of claim 11 further comprising manipulating each of the violating areas differently based on whether the area violates a minimum width rule and whether the area violates a minimum space rule for said photomask.

13. The machine readable storage medium of claim 12 wherein said manipulating includes enlarging an area that violates said minimum width rule when said area lies inside a design shape.

14. The machine readable storage medium of claim 12 wherein said manipulating includes enlarging an area that violates said minimum space rule when said area lies outside a design shape.

15. The machine readable storage medium of claim 12 wherein said manipulating includes removing an area that violates said minimum width rule when said area lies outside a design shape.

16. The machine readable storage medium of claim 12 wherein said manipulating includes filling an area that violates said minimum space rule when said area lies inside a design shape.

17. The machine readable storage medium of claim 12 wherein said manipulating includes:

enlarging an area that violates said minimum width rule when said area lies inside a design shape;

removing an area which violates said minimum width rule when said area lies outside a design shape;

filling an area which violates said minimum space rule when said area lies inside a design shape; and

enlarging an area which violates said minimum space rule when said area lies outside a design shape.

18. The machine readable storage medium of claim 12 wherein said digital representation of said photomask is corrected for optical proximity prior to said step of identifying said violating areas.

19. The machine readable storage medium of claim 18 wherein said violating areas include an area violating a minimum space rule between a filled area of a mask shape and another filled area of the mask shape.

20. The machine readable storage medium of claim 18 wherein said violating areas include an area violating a minimum space rule between a mask shape and another mask shape of said photomask.

21. A system operable to correct rule violations of a photomask using a digital representation of the photomask,

said system being operable to identify violating areas of the photomask from a digital representation of the photomask, the violating areas including at least one of areas violating a minimum width rule and areas violating a minimum space rule for said photomask, said system further being operable to manipulate each of the violating areas differently based on the placement of the violating area relative to a design shape of a layout pattern to be imaged using the photomask, said manipulation being for the purpose of eliminating the rule violations.